

Millennium PG-1 Pump Grade Adhesive Field Conditions and Field Questions

This bulletin is intended as a summary of questions and answers regarding various field issues which may arise when using Millennium PG-1 Pump Grade Adhesive. Our goal is to provide some general guidelines. If you feel something should be added, please submit your idea so that we make this outline as complete as possible.

1. What is Millennium PG-1 Pump Grade Adhesive and how is it packaged?

Answer: Millennium PG-1 Pump Grade Adhesive is a two-component, VOC compliant, all purpose, low rise, bulk packaged, polyurethane foamable adhesive that contains no solvents and sets in minutes, and transforms into a low rise foam during the cure process. It is packaged in 5 gallon boxes, 5 gallon pails, and 50 gallon drums of part "1" and part "2".

2. How is Millennium PG-1 Pump Grade Adhesive applied?

Answer: Millennium PG-1 Pump Grade Adhesive is applied through the Cyclone or Cyclone II low pressure pump cart which is designed to dispense a two component 1:1 Ratio low viscosity, low rise polyurethane foamable adhesive.

1. Extend quick connect spouts in Part 1 and Part 2 box packaging. When using pails stir contents before material is poured into the holding tanks on approved pump machine.
2. Invert box and place in tray on the Millennium Cyclone or Cyclone II pump. Box labeled Part 1 must be in area of tray labeled "Part 1" and Part 2 in area labeled "Part 2".
3. If pails are used fill holding tanks as recommended by pump manufacturer. Part 1 and Part 2 must be equally mixed. If drums are used follow all recommendations provided by pump manufacturer.
4. Connect the black Part 1 fitting to the black feed hose fitting. Connect the gray Part 2 fitting to the gray feed hose fitting. Operate pump according to manufacturer's instructions.
5. Apply Millennium PG-1 Pump Grade Adhesive directly to the substrate, using a ribbon pattern. Space beads 12" o.c., to achieve proper coverage rates for insulation attachment.
6. Millennium PG-1 Pump Grade Adhesive should be approximately 70°F (22°C) when being dispensed. As adhesive is applied, allow to begin rising, then place insulation board into adhesive. Do not allow the adhesive to skin over. Eliminate uneven surfaces to ensure positive contact between the adhesive, insulation board, and substrate.
7. Unused material can be applied at a later date. Properly clean dispensing wand and pump unit according to pump manufacturer's recommendations.

Follow pump manufacturer's operating instructions for maintenance and service

3. What is the standard coverage rate of Millennium PG-1 Pump Grade Insulation Adhesive?

Answer: Part "1" and Part "2", mixed through the low pressure pump cart, will produce in the range of 2,000 to 2,500 sq.ft. (186m² – 232m²) from the two 5 gallon units, when properly mixed and applied.

Coverage estimates indicate total sq.ft. of insulation per unit. Rates are based on an application pattern of 4 (four) ½" – ¾" (1.27cm – 1.91cm) ribbons spaced 12" (30cm) o.c. per 4' x 4' (1.2m x 1.2m) insulation board.

NOTE: A ½" – ¾" (1.27cm – 1.91cm) wide uncured adhesive bead will produce a 2" – 3" (5.08cm – 7.62cm) wide cured adhesive bead that will rise approximately ¾" – 1" (1.91cm – 2.54cm) above the substrate. Coverage rates may vary when used over irregular surfaces and will vary depending on roughness.

NOTE: In order to avoid an initial inconsistent mix, the first small amount of material from each start should be discarded. Once a consistent color is attained, usually after only a few seconds, Millennium PG-1 Pump Grade insulation Adhesive is ready to be applied.

4. How long after the adhesive is applied should one wait before introducing the insulation board to the adhesive?

Answer: As adhesive is applied, allow to begin rising, then place insulation board into adhesive. Do not allow the adhesive to skin over. Eliminate un-even surfaces to ensure positive contact between the adhesive, insulation board, and substrate. If left open, the adhesive can skin over within several minutes. Once skinned over, adhesive will not wet into the insulation board, this creating a weak bond. Do not allow the adhesive to skin over.

5. Once the adhesive is applied and the insulation board has been set into the adhesive, what is the recommended waiting time before the insulation is ready to handle for traffic associated with roof cover application?

Answer: Once the insulation has been placed into freshly applied adhesive, set-time (length of time until the adhesive provides sufficient bond to support foot traffic) is fairly consistent. While absolute set-time cannot be pre-determined, 5 to 10 minutes in any temperature is usually enough time. Attempting to slide the insulation boards from side to side is the test method to determine whether they have been locked down sufficiently enough to roof over.

HINT: Each day before use, place a small amount of Millennium PG-1 Pump Grade Adhesive onto a scrap piece of insulation. Check it periodically to determine the set-time for the conditions of that given day.

6. In what temperature can I use Millennium PG-1 Pump Grade Insulation Adhesive?

Answer: Millennium PG-1 Pump Grade Adhesive should not be applied below 40°F (5°C). Properly stored material will be applied at approx. 70°F (22°C).

7. How should Millennium PG-1 Pump Grade Adhesive be stored?

Answer: Keep temperatures of contents between 45°F - 95°F (7°C - 35°C) 24 hours prior to use. Do not store in direct sunlight or high temperatures (95°F / 35°F and higher). KEEP FROM FREEZING

8. What can a roofing contractor do at the job site to accelerate the curing process when using Millennium PG-1 Pump Grade Adhesive?

Answer: Accelerating the cure is not necessary. Millennium PG-1 Pump Grade Adhesive is a two-part adhesive with a chemical cure. Surrounding ambient conditions will have a minimal effect on properly stored and applied adhesive.

9. Can Millennium PG-1 Pump Grade Adhesive be applied to a wet substrate?

Answer: No. All substrates must be dry prior to application. When adhesives and sealants are applied to a wet substrate, the result is a weak bond. Excessive moisture on the substrate surface can cause the adhesive to skin over at the adhesion line, preventing the adhesive from wetting into the substrate.

10. Does Millennium PG-1 Pump Grade Adhesive require the use of a primer?

Answer: In most applications, no primer is required. Our formulation includes the use of adhesion promoters that allow for excellent adhesion to most surfaces. However, when applying the adhesive over surfaces that are known to be heavily oxidized, such as an existing smooth surfaced BUR or MB, the use of Millennium Universal Primer is recommended.

NOTE: Special care should be taken when using a primer other than Millennium Universal Primer. Primers that contain solvents must be allowed to flash off entirely prior to adhesive application. Solvents that are not allowed to flash out of the primer will adversely affect the adhesive bond.

11. When a roofing project's specification includes the removal of the existing roof system, how clean does the substrate need to be prior to the application of Millennium PG-1 Pump Grade Adhesive?

Answer: The substrate should be cleaned to as smooth a surface as possible. To secure proper adhesion, insulation boards must lay flat on the surface with no rocking. This is to ensure that the boards are in contact with the adhesive. Remove any heavy build-ups of bitumen, insulation, or other debris. Residual asphalt or coal tar does not need to be removed Millennium PG-1 Pump Grade Adhesive provides excellent adhesion to both materials

12. What should be done in the event that the substrate is un-even and the insulation board cannot lay flat or is not in contact with the adhesive?

Answer: Determine why the board will not lay flat. If there is debris or heavy build-up, remove it. If the board is cupped or curled, use a different board. If the deck is un-even due to elevation variances, i.e. pre-cast panels, place a relief cut into the insulation board at the point of transition, place temporary weight upon the board, or if possible add a mechanical fastener to assure the board maintains contact with the insulation adhesive.

13. What is the maximum insulation board size approved for use with Millennium PG-1 Pump Grade Adhesive?

Answer: Insulation boards should be no larger than 4 ft. x 4 ft. However, overlays such as gypsum boards can be installed in their original 4 ft. x 8 ft. size.

14. What is the shelf life of Millennium PG-1 Pump Grade Adhesive?

Answer: When stored properly at temperatures between 45°F and 95°F (7°C and 35°C), Millennium PG-1 Pump Grade Adhesive has a shelf life of twelve months from the date of manufacture. However, it is recommended that stock be rotated to eliminate shelf life concerns. Material which is older than 12 months, but is still fluid, is acceptable for use. Do not store in direct sunlight or high temperatures (95°F / 35°C and higher). KEEP FROM FREEZING

15. Once adhesive has cured within the static mixing nozzle, can it be cleaned and reused?

Answer: No. Once adhesive has cured in the static mixing nozzle, the nozzle is no longer usable. Throw it away and use a new nozzle.

16. Can Millennium PG-1 Pump Grade Adhesive be applied to a gravel surfaced built-up roof?

Answer: Yes. The following procedures must be followed:

1. Existing roof must be completely cleaned of any loose debris and gravel. This may entail vacuuming, power brooming or a combination of both. Hydro vacuuming would be an acceptable method; but if used, it will be necessary to allow the roof surface to dry completely before adhering any boards.
2. The existing roof must be inspected for any defects or blisters in the felts. These areas must be cut out and repaired properly to create a flat surface on top of which to place insulation boards.

3. The roof surface must be blown off with a power blower.
4. The surface must be primed using our Millennium Universal Primer.
5. Due to anticipated surface irregularities of a gravel surface roof, the application will require more adhesive than our standard rates

Contact our Technical Department with any questions.

17. Can Millennium PG-1 Pump Grade Adhesive be applied over lightweight insulating concrete?

Answer: Yes. The following procedures must be followed:

1. Surface of the Light Weight Insulating Concrete (LWIC) should be clean, dry, smooth, and free of fins, depressions, sharp edges, dirt, dust, debris, oils and other contaminants that may result in a surface that is not sound or uneven.
2. If an existing roof will be removed prior to the installation of the adhesive, all loose material must be removed. Damaged areas to the deck must be repaired with an approved patching compound to create a flat surface to place insulation boards or new roof membranes on top of.
3. The deck surface must be blown off with a power blower.
4. New LWIC must be sufficiently dry to receive the adhesives. Consult the LWIC manufacturer for drying time requirements.
5. Adhesion tests may be required; this will be determined on project criteria and warranty requirements.

All Millennium materials will need to be installed in accordance to our most current written guidelines.

ADCO Products, Inc. will not be responsible for the integrity and performance of the existing deck.

Contact our Technical Department with any questions.

18. Can Millennium PG-1 Pump Grade Adhesive be applied directly to an asphaltic vapor retarder, base sheet, or existing smooth roof?

Answer: Yes. When applying adhesive to an asphaltic vapor retarder it must be either smooth sanded, or granulated surface. If the asphalt is heavily oxidized or fresh, it could require an application of Millennium Universal Primer or Millennium Surface Treatment. Contact our Technical Department with further questions.

As with most substrates where Millennium PG-1 Pump Grade Adhesive is to be applied, the surface must be clean, dry, and free of dirt, dust, debris, oils, loose gravel, unadhered coatings, deteriorated membrane and other contaminants that may result in a surface that is not sound or is un-even. Remember, insulation boards must lay flat upon a sound roof surface in order to ensure proper contact between the board and the adhesive.